Figure 1

```
# Aligned_sequences: 2
# 1: Pcan057
# 2: Pcan057v1
# Matrix: EDNAFULL
# Gap_penalty: 100.0
# Extend_penalty: 0.05
#=====================================

Pcan057          1 aaacttcatcaaggtacntaaggttgtaaggttctcggggggtagcggct      50

Pcan057v1        1                                                          0

Pcan057         51 tgcacacctcttgaagggcttcarccgggcccctggctccttcaggctgg     100

Pcan057v1        1                                                          0

Pcan057        101 ctgccttnatccgcttatccaatgattggataacggatgaggggagtctg     150

Pcan057v1        1                                                          0

Pcan057        151 ggtgccaggtgctttgcccgcatggcccatttcagtcacgctgcagtcct     200

Pcan057v1        1                                                          0

Pcan057        201 gtcaggaaaaaatcagtgttattctcattctacatatgagaaaactgagg     250

Pcan057v1        1                                                          0

Pcan057        251 cttgcagatataagggccaaaagttacacagctagtgagtgatggggctg     300

Pcan057v1        1                                                          0

Pcan057        301 agtttcagactccacagtctcttaaccaccaagcagcatgcccagagtag     350

Pcan057v1        1                                                          0

Pcan057        351 aggtgagaaggaaggagagagctgcggtccacatgagcatctggacctag     400

Pcan057v1        1                                                          0

Pcan057        401 catggacaactcactcctccctggctctcgctttgttcttgttgcgggtg     450

Pcan057v1        1                                                          0

Pcan057        451 tggtggtggtgggactcaaagacggtaaagatagctttctctcctccctg     500

Pcan057v1        1                                                          0

Pcan057        501 gggaatctggggggttgtttaaaaggcctgctcctctttttagaaggcagga   550

Pcan057v1        1                                                          0
```

Figure 1 Continued

Pcan057	551	gggccccaagggaagcagaaggtgacagaagggggaaagggtcctctgatc	600
Pcan057v1	1		0
Pcan057	601	attgctc--	607
		|·|·|||	
Pcan057v1	1	aattctcgagctcgtcgaccggtcgacgagctcgagggtcgacgagctcg	50
Pcan057	608	---	607
Pcan057v1	51	agggcgcgcgcccggcccccacccctcgcagcaccccgcgccccgcgccc	100
Pcan057	608	---	607
Pcan057v1	101	tcccagccgggtccagccggagccatggggccggagccgcagtgagcacc	150
Pcan057	608	---	607
Pcan057v1	151	atggagctggcggccttgtgccgctggggggctcctcctcgccctcttgcc	200
Pcan057	608	---	607
Pcan057v1	201	ccccggagccgcgagcacccaagtgtgcaccggcacagacatgaagctgc	250
Pcan057	608	---	607
Pcan057v1	251	ggctccctgccagtcccgagacccacctggacatgctccgccacctctac	300
Pcan057	608	---	607
Pcan057v1	301	cagggctgccaggtggtgcagggaaacctggaactcacctacctgcccac	350
Pcan057	608	---	607
Pcan057v1	351	caatgccagcctgtccttcctgcaggatatccaggaggtgcagggctacg	400
Pcan057	608	---	607
Pcan057v1	401	tgctcatcgctcacaaccaagtgaggcaggtcccactgcagaggctgcgg	450
Pcan057	608	---	607
Pcan057v1	451	attgtgcgaggcacccagctctttgaggacaactatgccctggccgtgct	500
Pcan057	608	--	607
Pcan057v1	501	agacaatggagacccgctgaacaataccacccctgtcacaggggcctccc	550

Figure 1 Continued

```
Pcan057      608 ---------------------------------accccacagagatcttgaaa    627
                                                   |||·|||·|||||||||||||||
Pcan057v1     51 caggaggcctgcgggagctgcagcttcgaagcctcacagagatcttgaaa    600

Pcan057      628 ggaggggtcttgatccagcggaaccccagctctgctaccaggacacgat    677
                 ||||||||||||||·|||||||||||||||||||||||||||||||||||||
Pcan057v1    601 ggaggggtcttgatccagcggaaccccagctctgctaccaggacacgat    650

Pcan057      678 tttgtggaaggacatcttccacaagaacaaccagctggctctcacactga    727
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1    651 tttgtggaaggacatcttccacaagaacaaccagctggctctcacactga    700

Pcan057      728 tagacaccaaccgctctcgggcctgccacccctgttctccgatgtgtaag    777
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1    701 tagacaccaaccgctctcgggcctgccacccctgttctccgatgtgtaag    750

Pcan057      778 ggctcccgctgctggggagagagttctgaggattgtcagagcctgacgcg    827
                 |||||||||||||||||||||||||||||||||||||||||||||||·|||
Pcan057v1    751 ggctcccgctgctggggagagagttctgaggattgtcagagcctgacgcg    800

Pcan057      828 cactgtctgtgccggtggctgtgcccgctgcaaggggccactgcccactg    877
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1    801 cactgtctgtgccggtggctgtgcccgctgcaaggggccactgcccactg    850

Pcan057      878 actgctgccatgagcagtgtgctgccggctgcacgggccccaagcactct    927
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1    851 actgctgccatgagcagtgtgctgccggctgcacgggccccaagcactct    900

Pcan057      928 gactgcctggcctgcctccacttcaaccacagtggcatctgtgagctgca    977
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1    901 gactgcctggcctgcctccacttcaaccacagtggcatctgtgagctgca    950

Pcan057      978 ctgcccagccctggtcacctacaacacagacacgtttgagtccatgccca    1027
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1    951 ctgcccagccctggtcacctacaacacagacacgtttgagtccatgccca    1000

Pcan057     1028 atcccgagggccggtatacattcggcgccagctgtgtgactgcctgtccc    1077
                 |||||||||||||||·|||||||||||||||||||||||||||||||||||
Pcan057v1   1001 atcccgagggccggtatacattcggcgccagctgtgtgactgcctgtccc    1050

Pcan057     1078 tacaactacctttctacggacgtgggatcctgcaccctcgtctgccccct    1127
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   1051 tacaactacctttctacggacgtgggatcctgcaccctcgtctgccccct    1100

Pcan057     1128 gcacaaccaagaggtgacagcagaggatggaacacagcggtgtgagaagt    1177
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   1101 gcacaaccaagaggtgacagcagaggatggaacacagcggtgtgagaagt    1150

Pcan057     1178 gcagcaagccctgtgcccgagtgtgctatggtctgggcatggagcacttg    1227
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   1151 gcagcaagccctgtgcccgagtgtgctatggtctgggcatggagcacttg    1200
```

Figure 1 Continued

```
Pcan057    1228 cgagaggtgagggcagttaccagtgccaatatccaggagtttgctggctg  1277
                |||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1  1201 cgagaggtgagggcagttaccagtgccaatatccaggagtttgctggctg  1250

Pcan057    1278 caagaagatctttgggagcctggcatttctgccggagagctttgatgggg  1327
                ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1  1251 caagaagatctttgggagcctggcatttctgccggagagctttgatgggg  1300

Pcan057    1328 acccagcctccaacactgccccgctccagccagagcagctccaagtgttt  1377
                ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1  1301 acccagcctccaacactgccccgctccagccagagcagctccaagtgttt  1350

Pcan057    1378 gagactctggaagagatcacaggttacctatacatctcagcatggccgga  1427
                ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1  1351 gagactctggaagagatcacaggttacctatacatctcagcatggccgga  1400

Pcan057    1428 cagcctgcctgacctcagcgtcttccagaacctgcaagtaatccggggac  1477
                ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1  1401 cagcctgcctgacctcagcgtcttccagaacctgcaagtaatccggggac  1450

Pcan057    1478 gaattctgcacaatggcgcctactcgctgaccctgcaagggctgggcatc  1527
                ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1  1451 gaattctgcacaatggcgcctactcgctgaccctgcaagggctgggcatc  1500

Pcan057    1528 agctggctggggctgcgctcactgagggaactgggcagtggactggccct  1577
                ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1  1501 agctggctggggctgcgctcactgagggaactgggcagtggactggccct  1550

Pcan057    1578 catccaccataacacccacctctgcttcgtgcacacggtgccctgggacc  1627
                ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1  1551 catccaccataacacccacctctgcttcgtgcacacggtgccctgggacc  1600

Pcan057    1628 agctctttcggaacccgcaccaagctctgctccacactgccaaccggcca  1677
                ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1  1601 agctctttcggaacccgcaccaagctctgctccacactgccaaccggcca  1650

Pcan057    1678 gaggacgagtgt--------------------------------------  1689
                ||||||||||||
Pcan057v1  1651 gaggacgagtgtggtaagacagggagcccagtgtgcgcactccccatctg  1700

Pcan057    1690 --------------------------------------------------  1689

Pcan057v1  1701 ccagcacacagcagtgcccaggggggccctggcagcagcgttcttggactt  1750

Pcan057    1690 --------------------------------------------------  1689

Pcan057v1  1751 gtgcagactgcccgtctctgtgcacccttcttgactcagcacagctctgg  1800

Pcan057    1690 --------------------------------------------------  1689
```

Figure 1 Continued

```
Pcan057v1   1801  ctggcttggcctcttggcatggcttctctagctgggtcctacctgccttg   1850

Pcan057     1690  --------------------------------------------------   1689

Pcan057v1   1851  gcatccttccctcccctctgtttctgaaatctcagaactcttcctctcc    1900

Pcan057     1690  --------------------------------------------------   1689

Pcan057v1   1901  ctacatcggccccacctgtccccacccctccagcccacagccatgcccac   1950

Pcan057     1690  --------------------------------------------------   1689

Pcan057v1   1951  agccagttccctggttcacttggacctggggcctcccctaaaagtcccct   2000

Pcan057     1690  ----------------------gtgggcgagggcctggcctgccaccag   1716
                                        ||||||||||||||||||||||||||||
Pcan057v1   2001  gcggtcccttcctcctcactgcagtgggcgagggcctggcctgccaccag   2050

Pcan057     1717  ctgtgcgcccgagggcactgctggggtccagggcccacccagtgtgtcaa   1766
                  ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   2051  ctgtgcgcccgagggcactgctggggtccagggcccacccagtgtgtcaa   2100

Pcan057     1767  ctgcagccagttccttcggggccaggagtgcgtggaggaatgccgagtac   1816
                  ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   2101  ctgcagccagttccttcggggccaggagtgcgtggaggaatgccgagtac   2150

Pcan057     1817  tgcaggggctccccagggagtatgtgaatgccaggcactgtttgccgtgc   1866
                  ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   2151  tgcaggggctccccagggagtatgtgaatgccaggcactgtttgccgtgc   2200

Pcan057     1867  caccctgagtgtcagccccagaatggctcagtgacctgttttggaccgga   1916
                  ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   2201  caccctgagtgtcagccccagaatggctcagtgacctgttttggaccgga   2250

Pcan057     1917  ggctgaccagtgtgtggcctgtgcccactataaggaccctcccttctgcg   1966
                  ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   2251  ggctgaccagtgtgtggcctgtgcccactataaggaccctcccttctgcg   2300

Pcan057     1967  tggcccgctgccccagcggtgtgaaacctgacctctcctacatgcccatc   2016
                  ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   2301  tggcccgctgccccagcggtgtgaaacctgacctctcctacatgcccatc   2350

Pcan057     2017  tggaagtttccagatgaggagggcgcatgccagccttgccccatcaactg   2066
                  ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   2351  tggaagtttccagatgaggagggcgcatgccagccttgccccatcaactg   2400

Pcan057     2067  cacccactcctgtgtggacctggatgacaagggctgccccgccgagcaga   2116
                  ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   2401  cacccactcctgtgtggacctggatgacaagggctgccccgccgagcaga   2450
```

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Figure 1 Continued

```
Pcan057     2117  gagccagccctctgacgtccatcatctctgcggtggttggcattctgctg  2166
                  ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   2451  gagccagccctctgacgtccatcatctctgcggtggttggcattctgctg  2500

Pcan057     2167  gtcgtggtcttgggggtggtctttgggatcctcatcaagcgacggcagca  2216
                  ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   2501  gtcgtggtcttgggggtggtctttgggatcctcatcaagcgacggcagca  2550

Pcan057     2217  gaagatccggaagtacacgatgcggagactgctgcaggaaacggagctgg  2266
                  ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   2551  gaagatccggaagtacacgatgcggagactgctgcaggaaacggagctgg  2600

Pcan057     2267  tggagccgctgacacctagcggagcgatgcccaaccaggcgcagatgcgg  2316
                  ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   2601  tggagccgctgacacctagcggagcgatgcccaaccaggcgcagatgcgg  2650

Pcan057     2317  atcctgaaagagacggagctgaggaaggtgaaggtgcttggatctggcgc  2366
                  ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   2651  atcctgaaagagacggagctgaggaaggtgaaggtgcttggatctggcgc  2700

Pcan057     2367  ttttggcacagtctacaagggcatctggatccctgatggggagaatgtga  2416
                  ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   2701  ttttggcacagtctacaagggcatctggatccctgatggggagaatgtga  2750

Pcan057     2417  aaattccagtggccatcaaagtgttgagggaaaacacatcccccaaagcc  2466
                  ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   2751  aaattccagtggccatcaaagtgttgagggaaaacacatcccccaaagcc  2800

Pcan057     2467  aacaaagaaatcttagacgaagcatacgtgatggctggtgtgggctcccc  2516
                  ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   2801  aacaaagaaatcttagacgaagcatacgtgatggctggtgtgggctcccc  2850

Pcan057     2517  atatgtctcccgccttctgggcatctgcctgacatccacggtgcagctgg  2566
                   |||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   2851  atatgtctcccgccttctgggcatctgcctgacatccacggtgcagctgg  2900

Pcan057     2567  tgacacagcttatgccctatggctgcctcttagaccatgtccgggaaaac  2616
                  ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   2901  tgacacagcttatgccctatggctgcctcttagaccatgtccgggaaaac  2950

Pcan057     2617  cgcggacgcctgggctcccaggacctgctgaactggtgtatgcagattgc  2666
                  ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v    2951  cgcggacgcctgggctcccaggacctgctgaactggtgtatgcagattgc  3000

Pcan057     2667  caaggggatgagctacctggaggatgtgcggctcgtacacagggacttgg  2716
                  ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   3001  caaggggatgagctacctggaggatgtgcggctcgtacacagggacttgg  3050
```

Figure 1 Continued

```
Pcan057    2717  ccgctcggaacgtgctggtcaagagtcccaaccatgtcaaaattacagac  2766
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1  3051  ccgctcggaacgtgctggtcaagagtcccaaccatgtcaaaattacagac  3100

Pcan057    2767  ttcgggctggctcggctgctggacattgacgagacagagtaccatgcaga  2816
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1  3101  ttcgggctggctcggctgctggacattgacgagacagagtaccatgcaga  3150

Pcan057    2817  tggggcaaggtgcccatcaagtggatggcgctggagtccattctccgcc   2866
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1  3151  tggggcaaggtgcccatcaagtggatggcgctggagtccattctccgcc   3200

Pcan057    2867  ggcggttcacccaccagagtgatgtgtggagttatggtgtgactgtgtgg  2916
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1  3201  ggcggttcacccaccagagtgatgtgtggagttatggtgtgactgtgtgg  3250

Pcan057    2917  gagctgatgacttttggggccaaaccttacgatgggatcccagcccggga  2966
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1  3251  gagctgatgacttttggggccaaaccttacgatgggatcccagcccggga  3300

Pcan057    2967  gatccctgacctgctggaaaaggggagcggctgccccagcccccatct    3016
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1  3301  gatccctgacctgctggaaaaggggagcggctgccccagcccccatct    3350

Pcan057    3017  gcaccattgatgtctacatgatcatggtcaaatgttggatgattgactct  3066
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1  3351  gcaccattgatgtctacatgatcatggtcaaatgttggatgattgactct  3400

Pcan057    3067  gaatgtcggccaagattccgggagttggtgtctgaattctcccgcatggc  3116
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1  3401  gaatgtcggccaagattccgggagttggtgtctgaattctcccgcatggc  3450

Pcan057    3117  cagggacccccagcgctttgtggtcatccagaatgaggacttgggcccag  3166
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1  3451  cagggacccccagcgctttgtggtcatccagaatgaggacttgggcccag  3500

Pcan057    3167  ccagtcccttggacagcaccttctaccgctcactgctggaggacgatgac  3216
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1  3501  ccagtcccttggacagcaccttctaccgctcactgctggaggacgatgac  3550

Pcan057    3217  atgggggacctggtggatgctgaggagtatctggtaccccagcagggctt  3266
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1  3551  atgggggacctggtggatgctgaggagtatctggtaccccagcagggctt  3600

Pcan057    3267  cttctgtccagaccctgccccgggcgctgggggcatggtccaccacaggc  3316
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1  3601  cttctgtccagaccctgccccgggcgctgggggcatggtccaccacaggc  3650

Pcan057    3317  accgcagctcatctaccaggagtggcggtggggacctgacactagggctg  3366
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1  3651  accgcagctcatctaccaggagtggcggtggggacctgacactagggctg  3700
```

Figure 1 Continued

```
Pcan057     3367 gagccctctgaagaggaggcccccaggtctccactggcaccctccgaagg 3416
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   3701 gagccctctgaagaggaggcccccaggtctccactggcaccctccgaagg 3750

Pcan057     3417 gg ggctccgatgtatttgatggtgacctgggaatgggggcagccaagg 3466
                 |||| |||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   3751 ggctggctccgatgtatttgatggtgacctgggaatgggggcagccaagg 3800

Pcan057     3467 ggctgcaaagcctccccacacatgaccccagccctctacagcggtacagt 3516
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   3801 ggctgcaaagcctccccacacatgaccccagccctctacagcggtacagt 3850

Pcan057     3517 gaggaccccacagtacccctgccctctgagactgatggctacgttgcccc 3566
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   3851 gaggaccccacagtacccctgccctctgagactgatggctacgttgcccc 3900

Pcan057     3567 cctgacctgcagcccccagcctgaatatgtgaaccagccagatgttcggc 3616
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   3901 cctgacctgcagcccccagcctgaatatgtgaaccagccagatgttcggc 3950

Pcan057     3617 cccagccccttcgccccgagagggccctctgcctgctgcccgacctgct 3666
                 |||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   3951 cccagccccttcgccccgagagggccctctgcctgctgcccgacctgct 4000

Pcan057     3667 ggtgccactctggaaagggccaagactctctccccagggaagaatggggt 3716
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   4001 ggtgccactctggaaagggccaagactctctccccagggaagaatggggt 4050

Pcan057     3717 cgtcaaagacgtttttgcctttggggctgccgtggagaaccccgagtact 3766
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   4051 cgtcaaagacgtttttgcctttggggctgccgtggagaaccccgagtact 4100

Pcan057     3767 tgacaccccagggaggagctgcccctcagccccaccctcctcctgccttc 3816
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   4101 tgacaccccagggaggagctgcccctcagccccaccctcctcctgccttc 4150

Pcan057     3817 agcccagccttcgacaacctctattactgggaccaggacccaccagagcg 3866
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   4151 agcccagccttcgacaacctctattactgggaccaggacccaccagagcg 4200

Pcan057     3867 gggggctccacccagcaccttcaaagggacacctacggcagagaacccag 3916
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   4201 gggggctccacccagcaccttcaaagggacacctacggcagagaacccag 4250

Pcan057     3917 agtacctgggtctggacgtgccagtgtgaaccagaaggccaagtccgcag 3966
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   4251 agtacctgggtctggacgtgccagtgtgaaccagaaggccaagtccgcag 4300

Pcan057     3967 aagccctgatgtgtcctcagggagcagggaaggcctgacttctgctggca 4016
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1   4301 aagccctgatgtgtcctcagggagcagggaaggcctgacttctgctggca 4350
```

Figure 1 Continued

```
Pcan057      4017  tcaagaggtgggagggccctccgaccacttccaggggaacctgccatgcc    4066
                   ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1    4351  tcaagaggtgggagggccctccgaccacttccaggggaacctgccatgcc    4400

Pcan057      4067  aggaacctgtcctaaggaaccttccttcctgcttgagttcccagatggct    4116
                   ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1    4401  aggaacctgtcctaaggaaccttccttcctgcttgagttcccagatggct    4450

Pcan057      4117  ggaaggggtccagcctcgttggaagaggaacagcactggggagtctttgt    4166
                   ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1    4451  ggaaggggtccagcctcgttggaagaggaacagcactggggagtctttgt    4500

Pcan057      4167  ggattctgaggccctgcccaatgagactctagggtccagtggatgccaca    4216
                   ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1    4501  ggattctgaggccctgcccaatgagactctagggtccagtggatgccaca    4550

Pcan057      4217  gcccagcttggccctttccttccagatcctgggtactgaaagccttaggg    4266
                   ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1    4551  gcccagcttggccctttccttccagatcctgggtactgaaagccttaggg    4600

Pcan057      4267  aagctggcctgagaggggaagcggccctaagggagtgtctaagaacaaaa    4316
                   ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1    4601  aagctggcctgagaggggaagcggccctaagggagtgtctaagaacaaaa    4650

Pcan057      4317  gcgacccattcagagactgtccctgaaacctagtactgccccccatgagg    4366
                   ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1    4651  gcgacccattcagagactgtccctgaaacctagtactgcccccatgagg    4700

Pcan057      4367  aaggaacagcaatggtgtcagtatccaggctttgtacagagtgcttttct    4416
                   ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1    4701  aaggaacagcaatggtgtcagtatccaggctttgtacagagtgcttttct    4750

Pcan057      4417  gtttagtttttactttttttgttttgtttttttaaagatgaaataaagac    4466
                   ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1    4751  gtttagtttttactttttttgttttgtttttttaaagatgaaataaagac    4800

Pcan057      4467  ccagggggagaatgggtgttgtatggggaggcaagtgtggggggtccttc    4516
                   ||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1    4801  ccagggggagaatgggtgttgtatggggaggcaagtgtggggggtccttc    4850

Pcan057      4517  tccacacccactttgtccatttgcaaatatattttggaaaaca     4559
                   |||||||||||||||||||||||||||||||||||||||||||
Pcan057v1    4851  tccacacccactttgtccatttgcaaatatattttggaaaaca     4893
```

Figure 2

```
# Aligned_sequences: 2
# 1: Pcan057.aa
# 2: Pcan057v1.aa
# Matrix: EBLOSUM62
# Gap_penalty: 100.0
# Extend_penalty: 0.01
#==========================================

Pcan057.aa        1                                                        0

Pcan057v1.aa      1 MELAALCRWGLLLALLPPGAASTQVCTGTDMKLRLPASPETHLDMLRHLY     50

Pcan057.aa        1                                                        0

Pcan057v1.aa     51 QGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLR    100

Pcan057.aa        1                                    MGLSFRLHSLLTTKQ      15
                                                       .....:|.||
Pcan057v1.aa    101 IVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLRSL-----    145

Pcan057.aa       16 HAQSRGEKEGESCGPHEHLDLAWTTHSSLALALFLLRVWWWWDSKTVKIA     65

Pcan057v1.aa    146 -------------------------------------------------    145

Pcan057.aa       66 FSPPWGIWGLFKRPAPLLEGRRAPREAEGDRRGKGPLIIAHPTEILKGGV    115
                                                                 |||||||||
Pcan057v1.aa    146 ------------------------------------------TEILKGGV    153

Pcan057.aa      116 LIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSR    165
                        |||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1.aa    154 LIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSR    203

Pcan057.aa      166 CWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCL    215
                        |||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1.aa    204 CWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCL    253

Pcan057.aa      216 ACLHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNY    265
                        |||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1.aa    254 ACLHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNY    303

Pcan057.aa      266 LSTDVGSCTLVCPLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREV    315
                        |||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1.aa    304 LSTDVGSCTLVCPLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREV    353

Pcan057.aa      316 RAVTSANIQEFAGCKKIFGSLAFLPESFDGDPASNTAPLQPEQLQVFETL    365
                        |||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1.aa    354 RAVTSANIQEFAGCKKIFGSLAFLPESFDGDPASNTAPLQPEQLQVFETL    403
```

Figure 2 Continued

```
Pcan057.aa    366 EEITGYLYISAWPDSLPDLSVFQNLQVIRGRILHNGAYSLTLQGLGISWL    415
                  |||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1.aa  404 EEITGYLYISAWPDSLPDLSVFQNLQVIRGRILHNGAYSLTLQGLGISWL    453

Pcan057.aa    416 GDRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLHTANRPEDE    465
                  |||||||||||||||||||||||||||||||||||||||||||||||||||
Pcan057v1.aa  454 GLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLHTANRPEDE    503

Pcan057.aa    466 CVGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQECVEECRVLQGLPRE    515
                  |...|.....|....|...|...................|.....
Pcan057v1.aa  504 CGKTGSPVCALPICQHTAVPRGPWQQRSWTCADCPSLCTLLDSAQLWLAW    553

Pcan057.aa    516 YVNARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVARCPSG    565
                  .:...........:....|......
Pcan057v1.aa  554 PLGMASLAGSYLPWHPSLPLCF                                575

Pcan057.aa    566 VKPDLSYMPIWKFPDEEGACQPCPINCTHSCVDLDDKGCPAEQRASPLTS    615

Pcan057v1.aa  576                                                       575

Pcan057.aa    616 IISAVVGILLVVVLGVVFGILIKRRQQKIRKYTMRRLLQETELVEPLTPS    665

Pcan057v1.aa  576                                                       575

Pcan057.aa    666 GAMPNQAQMRILKETELRKVKVLGSGAFGTVYKGIWIPDGENVKIPVAIK    715

Pcan057v1.aa  576                                                       575

Pcan057.aa    716 VLRENTSPKANKEILDEAYVMAGVGSPYVSRLLGICLTSTVQLVTQLMPY    765

Pcan057v1.aa  576                                                       575

Pcan057.aa    766 GCLLDHVRENRGRLGSQDLLNWCMQIAKGMSYLEDVRLVHRDLAARNVLV    815

Pcan057v1.aa  576                                                       575

Pcan057.aa    816 KSPNHVKITDFGLARLLDIDETEYHADGGKVPIKWMALESILRRRFTHQS    865

Pcan057v1.aa  576                                                       575

Pcan057.aa    866 DVWSYGVTVWELMTFGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYM    915

Pcan057v1.aa  576                                                       575

Pcan057.aa    916 IMVKCWMIDSECRPRFRELVSEFSRMARDPQRFVVIQNEDLGPASPLDST    965

Pcan057v1.aa  576                                                       575

Pcan057.aa    966 FYRSLLEDDDMGDLVDAEEYLVPQQGFFCPDPAPGAGGMVHHRHRSSSTR   1015
```

Figure 2 Continued

```
Pcan057v1.aa  576                                                      575

Pcan057.aa    1016  SGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPT    1065

Pcan057v1.aa  576                                                      575

Pcan057.aa    1066  HDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPR    1115

Pcan057v1.aa  576                                                      575

Pcan057.aa    1116  EGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGA    1165

Pcan057v1.aa  576                                                      575

Pcan057.aa    1166  APQPHPPPAFSPAFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDV    1215

Pcan057v1.aa  576                                                      575

Pcan057.aa    1216  PV      1217

Pcan057v1.aa  576              575
```

Figure 3.

```
# Aligned_sequences: 2
# 1: Pro108
# 2: Pro177
# Matrix: EDNAFULL
# Gap_penalty: 100.0
# Extend_penalty: 0.01
#=======================================

Pro108      1                                             gcacga        6
                                                          ...|..
Pro177      1 gggagggataggacggggagacaaagaaaggggtgcggcagcactgccag      50

Pro108      7 gggaagagggtgatccgacccggggaaggtcgctgggcagggcgagttgg      56
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Pro177     51 gggaagagggtgatccgacccggggaaggtcgctgggcagggcgagttgg     100

Pro108     57 gaaagcggcagcccccgccgcccccgcagccccttctcctcctttctccc     106
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Pro177    101 gaaagcggcagcccccgccgcccccgcagcccttctcctcctttctccc     150

Pro108    107 acgtcctatctgcctctcgctggaggccaggccgtgcagcatcgaagaca     156
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Pro177    151 acgtcctatctgcctctcgctggaggccaggccgtgcagcatcgaagaca     200

Pro108    157 ggaggaactggagcctcattggccggcccggggcgccggcctcgggctta     206
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Pro177    201 ggaggaactggagcctcattggccggcccggggcgccggcctcgggctta     250

Pro108    207 aataggagctccgggctctggctgggacccgaccgctgccggccgcgctc     256
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Pro177    251 aataggagctccgggctctggctgggacccgaccgctgccggccgcgctc     300

Pro108    257 ccgctgctcctgccgggtgatggaaaacccagcccggccgccgccctgg     306
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Pro177    301 ccgctgctcctgccgggtgatggaaaacccagcccggccgccgccctgg     350

Pro108    307 gcaaggccctctgcgctctcctcctggccactctcggcgccgccggccag     356
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Pro177    351 gcaaggccctctgcgctctcctcctggccactctcggcgccgccggccag     400

Pro108    357 cctcttgggggagagtccatctgttccgccagagccccggccaaatacag     406
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Pro177    401 cctcttgggggagagtccatctgttccgccagagccccggccaaatacag     450

Pro108    407 catcaccttcacgggcaagtggagccagacggccttccccaagcagtacc     456
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Pro177    451 catcaccttcacgggcaagtggagccagacggccttccccaagcagtacc     500

Pro108    457 ccctgttccgcccccctgcgcagtggtcttcgctgctgggggccgcgcat     506
              .||||||||||||||||||||||||||||||||||||||||||||||||||
```

Figure 3 Continued

```
Pro177    501 ccctgttccgccccctgcgcagtggtcttcgctgctgggggccgcgcat   550

Pro108    507 agctccgactacagcatgtggaggaagaaccagtacgtcagtaacgggct   556
              ||||||.||||||||||||||||||||||||||||||||||||||||||||
Pro177    551 agctccgactacagcatgtggaggaagaaccagtacgtcagtaacgggct   600

Pro108    557 gcgcgactttgcggagcgcggcgaggcctgggcgctgatgaaggagatcg   606
              ||||||||||||||||||||||||||||||||||||||||||||||.|||||
Pro177    601 gcgcgactttgcggagcgcggcgaggcctgggcgctgatgaaggagatcg   650

Pro108    607 aggcggcggggaggcgctgcagagcgtgcacgcggtgttttcggcgccc   656
              |||||||||||||||||||||||||||||||||||||.||||||||||||||
Pro177    651 aggcggcggggaggcgctgcagagcgtgcacgaggtgttttcggcgccc   700

Pro108    657 gccgtccccagcggcaccgggcagacgtcggcggagctggaggtgcagcg   706
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Pro177    701 gccgtccccagcggcaccgggcagacgtcggcggagctggaggtgcagcg   750

Pro108    707 caggcactcgctggtctcgtttgtggtgcgcatcgtgcccagccccgact   756
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Pro177    751 caggcactcgctggtctcgtttgtggtgcgcatcgtgcccagccccgact   800

Pro108    757 ggttcgtgggcgtggacagcctggacctgtgcgacggggaccgttggcgg   806
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Pro177    801 ggttcgtgggcgtggacagcctggacctgtgcgacggggaccgttggcgg   850

Pro108    807 gaacaggcggcgctggacctgtaccccTacgacgccgggacggacagcgg   856
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Pro177    851 gaacaggcggcgctggacctgtaccccTacgacgccgggacggacagcgg   900

Pro108    857 cttcaccttctcctcccccaacttcgccaccatcccgcaggacacggtga   906
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Pro177    901 cttcaccttctcctcccccaacttcgccaccatcccgcaggacacggtga   950

Pro108    907 ccgagataacgtcctcctctcccagccacccggccaactccttctactac   956
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Pro177    951 ccgagataacgtcctcctctcccagccacccggccaactccttctactac  1000

Pro108    957 ccgcggctgaaggccctgcctcccatcgccagggtgacactggtgcggct  1006
              |||||||||||||||||||||||||||||||||||||||.||||||||
Pro177   1001 ccgcggctgaaggccctgcctcccatcgccagggtgacactgctgcggct  1050

Pro108   1007 gcgacagagccccagggccttcatccctcccgccccagtcctgcccagca  1056
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Pro177   1051 gcgacagagccccagggccttcatccctcccgccccagtcctgcccagca  1100

Pro108   1057 gggacaatgagattgtagacagcgcct---------------------  1083
              |||||||||||||||||||||||||||
Pro177   1101 gggacaatgagattgtagacagcgcctcaggtaacggacatacaggtcac  1150
```

Figure 3 Continued

```
Pro108    1084  --------------------------------------------    1083

Pro177    1151  atgggacacacagcagccccgaaccctgccacagggcgaccaccaaaccc    1200

Pro108    1084  --------------------------------------------------    1083

Pro177    1201  gaacctaaggctctgagaaattccaagtagggattcgtagtgcgtactgc    1250

Pro108    1084  --------------------------------------------------    1083

Pro177    1251  aagatggtgcctagaagatttaggattctgttgattcacacactgaagat    1300

Pro108    1084  --------------------------------------------------    1083

Pro177    1301  gtgactcttgcacattatttgcagttgaaagcatcttacagggccacagc    1350

Pro108    1084  --------------------------------------------------    1083

Pro177    1351  ccagaggaaagaatgaaaggaggctccagacagtacctgagagactctgt    1400

Pro108    1084  --------------------------------------------------    1083

Pro177    1401  cctgtcagacacgcacccacaggtgacctgtgtgtcacagctgacaagga    1450

Pro108    1084  --------------------------------------------------    1083

Pro177    1451  agcttgctaggatggccctgtgtggccaccgggtgacagctatgctgcag    1500

Pro108    1084  --------------------------------------------------    1083

Pro177    1501  ggcacctgtgggggtctcgggacccagccaccacacagctcggggctctg    1550

Pro108    1084  --------------------------------------------------    1083

Pro177    1551  ctcacaggcgccttggcctggggcggggcaggtgctgatgagcattctcc    1600

Pro108    1084  --------------------------------------------------    1083

Pro177    1601  tagctcttccaggcacctgctggacagggcaggctgggaacgctggggcc    1650

Pro108    1084  --------------------------------------------------    1083

Pro177    1651  gagtggcagttccctccctactcagctgggtggcagccactggcctcacg    1700

Pro108    1084  --------------------------------------------------    1083

Pro177    1701  gagcgcctgtggtctggagcgcattgctgggtcgtgggtcagggcctgtt    1750

Pro108    1084  --------------------------------------------------    1083
```

Figure 3 Continued

```
Pro177    1751 ggctctgggtctctgggtctcacctgatatgggtgtgggacagtcagtgt    1800

Pro108    1084 --------------------------------------------------    1083

Pro177    1801 aggccccagacaacagcggacttcagactttcccgaggaggaactggagc    1850

Pro108    1084 --------------------------------------------------    1083

Pro177    1851 ccaccaacctggccatgggccccgtcgtcctccaccctccatgttgctgg    1900

Pro108    1084 --------------------------------------------------    1083

Pro177    1901 ctggagttgaggcaggtacggggccgccccacacctgccccccaagccat    1950

Pro108    1084 --------------------------------------------------    1083

Pro177    1951 gtggtagggacagatgtcgtcttgaggagcagcagtaattacaagcttac    2000

Pro108    1084 --------------------------------------------------    1083

Pro177    2001 tgtcagccgtccctggaagcaagggccaggtcaggtcagacaggaggccg    2050

Pro108    1084 --------------------------------------------------    1083

Pro177    2051 cctggctggcgggaaccactccccagacagagactgtgcccagtcctggg    2100

Pro108    1084 --------------------------------------------------    1083

Pro177    2101 tccctcctcatttgggatgaactgggcctccctgtgccagcctcggtgct    2150

Pro108    1084 --------------------------------------------------    1083

Pro177    2151 gccctgcccagtgcaggcttgggctcctcactcatttgtccacgcggat    2200

Pro108    1084 --------------------------------------------------    1083

Pro177    2201 gccccattccaagcagatgtccccgagccacttacccaacaggcagacgt    2250

Pro108    1084 --------------------------------------------------    1083

Pro177    2251 gccagcactgttcgtggtgtgcaactggtctggcgggaagagcccctcgt    2300

Pro108    1084 --------------------------------------------------    1083

Pro177    2301 gggcagagggtccagagaggtgcggtttgccccacatttgggggcactgg    2350

Pro108    1084 --------------------------------------------------    1083

Pro177    2351 gccacagtgggcaggggagcacgtggccagtgccctgggtctgccacgat    2400
```

Figure 3 Continued

```
Pro108    1084 ------------------------------------------------    1083

Pro177    2401 gtgggagttccaccaccacagggacttgagcggcagctccggctcttacg    2450

Pro108    1084 ------------------------------------------------    1083

Pro177    2451 tagaaacgcgcaactccagtccctaggttgtgtccgaggttgctatggtg    2500

Pro108    1084 ------------------------------------------------    1083

Pro177    2501 ccatcccatcttgccgctcactctgcgactgtgcggagaaacgcaagtgc    2550

Pro108    1084 ------------------------------------------------    1083

Pro177    2551 ccccgaagggtgggcgtggcctctgatgaatgcacacgttggtgggaggt    2600

Pro108    1084 ------------------------------------------------    1083

Pro177    2601 ggcttccgtttgtacgaagcgcctcttcacgcgagcgttcacctcggtct    2650

Pro108    1084 --------------cagttccagaaacgccgctggactgcgaggtctcc    1118
                              ||||||||||||||||||||||||||||||||||
Pro177    2651 cccctttgcttggtccagttccagaaacgccgctggactgcgaggtctcc    2700

Pro108    1119 ctgtggtcgtcctggggactgtgcggaggccactgtgggaggctcgggac    1168
               ||||||||||||||||||||||||||||||||||||||||||||||||||
Pro177    2701 ctgtggtcgtcctggggactgtgcggaggccactgtgggaggctcgggac    2750

Pro108    1169 caagagcaggactcgctacgtccgggtccagcccgccaacaacgggagcc    1218
               ||||||||||||||||||||||||||||||||||||||||||||||||||
Pro177    2751 caagagcaggactcgctacgtccgggtccagcccgccaacaacgggagcc    2800

Pro108    1219 cctgccccgagctcgaagaagaggctgagtgcgtccctgataactgcgtc    1268
               ||||||||||||||||||||||||||||||||||||||||||||||||||
Pro177    2801 cctgccccgagctcgaagaagaggctgagtgcgtccctgataactgcgtc    2850

Pro108    1269 taagaccagagccccgcagcccctgggg-cccccggagccatggggtgtc    1317
               ||||||||||||||||||||||||||||| |||||||||||||||||||||
Pro177    2851 taagaccagagccccgcagcccctggggccccccggagccatggggtgtc    2900

Pro108    1318 ggggctcctgtgcaggctcatgctgcaggcggccga-ggcacagggggt    1366
               |||||||||||||||||||||||||||||||||||| ||||||||||||
Pro177    2901 ggggctcctgtgcaggctcatgctgcaggcggccgagggcacagggggt    2950

Pro108    1367 ttcgcgctgctcctgaccgcggtgaggccgcgccgaccatctctgcactg    1416
               ||||||||||||||||||||||||||||||||||||||||||||||||||
Pro177    2951 ttcgcgctgctcctgaccgcggtgaggccgcgccgaccatctctgcactg    3000
```

Figure 3 Continued

```
Pro108   1417  aagggccctctggtggccggcacgggcattgggaaacagcctcctccttt   1466
               |||||||||||||||||||||||||||||||||||||||||||||||||||
Pro177   3001  aagggccctctggtggccggcacgggcattgggaaacagcctcctccttt   3050

Pro108   1467  cccaaccttgcttcttaggggcccccgtgtcccgtctgctctcagcctcc   1516
               ||||||||||||||||||||||||||||||||||||||||||||||||||
Pro177   3051  cccaaccttgcttcttaggggcccccgtgtcccgtctgctctcagcctcc   3100

Pro108   1517  tcctcctgcaggataaagtcatccccaaggctccagctactctaaattat   1566
               ||||||||||||||||||||||||||||||||||||||||||||||||||
Pro177   3101  tcctcctgcaggataaagtcatccccaaggctccagctactctaaattat   3150

Pro108   1567  ggtctccttataagttattgctgctccaggagattgtccttcatcgtcca   1616
               |||||||||||||||||||||||||||||||||||||||||||||||||
Pro177   3151  -gtctccttataagttattgctgctccaggagattgtccttcatcgtcca   3199

Pro108   1617  ggggcctggctcccacgtggttgcagatacctcagacctggtgctctagg   1666
               ||||||||||||||||||||||||||||||||||||||||||||||||||
Pro177   3200  ggggcctggctcccacgtggttgcagatacctcagacctggtgctctagg   3249

Pro108   1667  ctgtgctgagcccactctcccgagggcgcatccaagcgggggccacttga   1716
               ||||||||||||||||||||||||||||||||||||||||||||||||||
Pro177   3250  ctgtgctgagcccactctcccgagggcgcatccaagcgggggccacttga   3299

Pro108   1717  gaagtgaataaatggggcggtttcggaagcgtcagtgtttccatgttatg   1766
               ||||||||||||||||||||||||||||||||||||||||||||||||||
Pro177   3300  gaagtgaataaatggggcggtttcggaagcgtcagtgtttccatgttatg   3349

Pro108   1767  gatctctctgcgtttgaataaagactatctctgttgctcac           1807
               |||||||||||||||||||||||||||||||||||||||||·
Pro177   3350  gatctctctgcgtttgaataaagactatctctgttgctcaaaaa        3393
```

Figure 4

```
Aligned_sequences: 2
# 1: PRO108.aa
# 2: PRO177.aa
# Matrix: EBLOSUM62
# Gap_penalty: 100.0
# Extend_penalty: 0.01
#========================================================
```

```
PRO108.aa     1 MENPSPAAALGKALCALLLATLGAAGQPLGGESICSARAPAKYSITFTGK      50
                |||||||||||||||||||||||||||||||||||||||||||||||||||
PRO177.aa     1 MENPSPAAALGKALCALLLATLGAAGQPLGGESICSARAPAKYSITFTGK      50

PRO108.aa    51 WSQTAFPKQYPLFRPPAQWSSLLGAAHSSDYSMWRKNQYVSNGLRDFAER     100
                |||||||||||||||||||||||||||.|||||||||||||||||||||||
PRO177.aa    51 WSQTAFPKQYPLFRPPAQWSSLLGAAHSSDYSMWRKNQYVSNGLRDFAER     100

PRO108.aa   101 GEAWALMKEIEAAGEALQSVHAVFSAPAVPSGTGQTSAELEVQRRHSLVS     150
                |||||||||||||||||||||||||.||||||||||||||||||||||||
PRO177.aa   101 GEAWALMKEIEAAGEALQSVHEVFSAPAVPSGTGQTSAELEVQRRHSLVS     150

PRO108.aa   151 FVVRIVPSPDWFVGVDSLDLCDGDRWREQAALDLYPYDAGTDSGFTFSSP     200
                |||||||||||||||||||||||||||||||||||||||||||||||||||
PRO177.aa   151 FVVRIVPSPDWFVGVDSLDLCDGDRWREQAALDLYPYDAGTDSGFTFSSP     200

PRO108.aa   201 NFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVTLVRLRQSPRA     250
                ||||||||||||||||||||||||||||||||||||||||||:|||||||
PRO177.aa   201 NFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVTLLRLRQSPRA     250

PRO108.aa   251 FIPPAPVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRLGTKS     300
                |||||||||||||||||||||||||...............:...:...........|..
PRO177.aa   251 FIPPAPVLPSRDNEIVDSASGNGHTGHMGHTAAPNPATGRPPNPNLRL       298

PRO108.aa   301 RTRYVRVQPANNGSPCPELEEEAECVPDNCV          331

PRO177.aa   299                                          298
```

Figure 5

```
# Aligned_sequences: 2
# 1: PRO108.aa
# 2: PRO177.orf
# Matrix: EBLOSUM62
# Gap_penalty: 100.0
# Extend_penalty: 0.01
#=========================================
```

```
PRO108.aa     1                                                        0

PRO177.orf    1 RCDSCTLFAVESILQGHSPEERMKGGSRQYLRDSVLSDTHPQVTCVSQLT     50

PRO108.aa     1                                                        0

PRO177.orf   51 RKLARMALCGHRVTAMLQGTCGGLGTQPPHSSGLCSQAPWPGAGQVLMSI    100

PRO108.aa     1                                                        0

PRO177.orf  101 LLALPGTCWTGQAGNAGAEWQFPPYSAGWQPLASRSACGLERIAGSWVRA    150

PRO108.aa     1                                                        0

PRO177.orf  151 CWLWVSGSHLIWVWDSQCRPQTTADFRLSRGGTGAHQPGHGPRRPPPSML    200

PRO108.aa     1                                                        0

PRO177.orf  201 LAGVEAGTGPPHTCPPSHVVGTDVVLRSSSNYKLTVSRPWKQGPGQVRQE    250

PRO108.aa     1                                                        0

PRO177.orf  251 AAWLAGTTPQTETVPSPGSLLIWDELGLPVPASVLPLPSAGLGSSLICPR    300

PRO108.aa     1                                                        0

PRO177.orf  301 GCPIPSRCPRATYPTGRRASTVRGVQLVWREEPLVGRGSREVRFAPHLGA    350

PRO108.aa     1                                                        0

PRO177.orf  351 LGHSGQGSTWPVPWVCHDVGVPPPQGLERQLRLLRRNAQLQSLGCVRGCY    400

PRO108.aa     1                                                MEN       3
                                                               ..:
PRO177.orf  401 GAIPSCRSLCDCAEKRKCPRRVGVASDECTRWWEVASVCTKRLFTRAFTS    450

PRO108.aa     4 PSPAAALGKALCALLLATLGAAGQPLGGESICSARAPAKYSITFTGKWSQ     53
                  .||..
PRO177.orf  451 VSPLL---------------------------------------------    455

PRO108.aa    54 TAFPKQYPLFRPPAQWSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEA    103
```

Figure 5 Continued

```
PRO108.aa    54  TAFPKQYPLFRPPAQWSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEA    103

PRO177.orf  456  --------------------------------------------------    455

PRO108.aa   104  WALMKEIEAAGEALQSVHAVFSAPAVPSGTGQTSAELEVQRRHSLVSFVV    153

PRO177.orf  456  --------------------------------------------------    455

PRO108.aa   154  RIVPSPDWFVGVDSLDLCDGDRWREQAALDLYPYDAGTDSGFTFSSPNFA    203

PRO177.orf  456  --------------------------------------------------    455

PRO108.aa   204  TIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVTLVRLRQSPRAFIP    253

PRO177.orf  456  --------------------------------------------------    455

PRO108.aa   254  PAPVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRLGTKSRTR    303
                               ..|||||||||||||||||||||||||||||||||||
PRO177.orf  456  --------------GPVPETPLDCEVSLWSSWGLCGGHCGRLGTKSRTR    490

PRO108.aa   304  YVRVQPANNGSPCPELEEEAECVPDNCV        331
                 |||||||||||||||||||||||||||
PRO177.orf  491  YVRVQPANNGSPCPELEEEAECVPDNCV        518
```